COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

RATIONALE FOR MODIFICATION NO. 1

CITY OF BRUSH

CDPS PERMIT NUMBER CO-0021245, MORGAN COUNTY

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I. TYPE OF PERMIT Minor Amendment

II. FACILITY INFORMATION

A. Facility Type: Domestic- Major Municipal, Mechanical System

B. Facility Classification: Class B per Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements

C. Facility Location: 20503 County Road 28, Brush, CO 80723, Latitude: 40° 17’ 56” N, Longitude: 103° 37’ 19” W

D. Permitted Feature: Outfall 001A, at the outfall line following UV disinfection but prior to entering the South Platte River. 40° 18' 24" N, 103° 37' 18" W

III. PURPOSE OF AMENDMENT:

In a modification request form dated August 27, 2012, the permittee outlines numerous updates needed in the permit and fact sheet as a result of new construction at the facility. The updates were instigated to reflect changes in hydraulic and organic capacities (from 1.66 MGD to 1.68 MGD, and from 2838 lbs BOD5 per day to 2610 lbs BOD5 per day respectively), as well as the facility’s move to UV rather than chlorine disinfection. Updates in the permit to change capacities and disinfection methods occurred in Part I.A.1, I.A.2, I.A.3 and I.B.2. Additionally, the permittee requested that the language used to describe facility processes be updated to reflect the new construction. Because changes are only made to the permit during the amendment process due to its being the legally enforceable document, the facility process update is presented here as an informational update only.

This facility consists of bar screening, a 12” influent Parshall flume with a continuous flow recorder and totalizer, vortex grit removal, submersible lift station with 3 pumps, primary clarification, primary pump station with sludge recycling, 4 trains activated sludge and biological nitrogen and phosphorus removal (Modified Johannesburg Process), fine bubble diffuser aeration, mixers for anoxic anaerobic zones, internal mixed liquor recirculation pump, secondary clarification, return activated and waste activated sludge pumping, dissolved air floatation for WAS thickening, UV disinfection, anaerobic digestion, drying beds and a 9” effluent Parshall flume with a continuous flow recorder and totalizer prior to discharge through an outfall line to the South Platte River. The hydraulic capacity of this facility is 1.68 MGD and the organic capacity is 2610 lbs BOD_5/day.

Elements added to the facility processes during expansion include:

Addition of two Modified Johannesburg Process (MJB) bioreactors for biological nitrogen and phosphorus removal, with a volume of 0.30 MG per reactor, for a total of four MJB reactors

Addition of 17 feet of length to the two previously approved MJB reactors for biological nutrient removal to increase the reactor volume to 0.30 MG per reactor

Addition of a fourth blower, for aeration of the two additional MJB reactors

Fine bubble diffuser aeration system including additional diffusers and modified piping for the aerobic zones for the MJB reactors

Addition of a mixer in each second anoxic zone for all MJB reactors

External carbon feed system for biological nutrient removal in the MJB reactors, as needed

Additional items at the facility, inadvertently omitted from the original site application, are as follows:

Standby hypochlorination, including contact time in the single remaining chlorine contact time basin and dechlorination with existing equipment

Dissolved Air Floatation (DAF) for thickening of waste activated sludge

IV. CHANGES MADE AS A RESULT OF THE AMENDMENT

The requested changes have been made to the permit document. Note that there are no required changes to the effluent limits as the change in design flow (0.02 cfs) has no effect on the limitations calculated in the previous WQA.

John Nieland
October 24, 2012

V PUBLIC NOTICE COMMENTS

There were no comments received during the public notice period for this modification.

John Nieland
December 20, 2012